



Welcome to AEDC

A meeting with our Stakeholders

...

*...seeking a new level of information
sharing and interdependence...*

28 Feb 02

DAVID J. EICHHORN
Colonel, USAF
Commander



What's important to you as a stakeholder is important to us ...

- **We are committed to seeking the most effective, productive and efficient arrangement for management, operations and maintenance of this national asset**
- **We have a major window of opportunity to transform and make significant improvements with our upcoming competition of our support contracts**

We need your ideas ...



We need your ideas on how AEDC can

- **Be a better supplier of RDT&E services ... provide increased stakeholder value**
- **Provide more effective, productive and efficient operations**
- **Foster a new level of information sharing and interdependence**
- **Maximize the opportunities from our upcoming support contract re-competition**



Desired Outcome...understand your input to the following questions

- What is changing in your business that we should consider?
- What services or capabilities do we need to change or improve?
- What management tactics, techniques, and procedures work for you and your thoughts on how they might work at AEDC?
- What are your ideas on increased information sharing and enhanced cooperation?
- How can we ensure continued trust in AEDC if we open up our Organizational Conflict of Interest (OCI) provision?
- What should we be emphasizing in this competition that will enable us to be a better T&E provider?



Key Re-competition Milestones

- **Release Draft RFP** **Aug 02**
- **Release Final RFP** **Jan 03**
- **Contract Award** **July 03**
- **Phase-in** **Aug 03**
- **Contract Execution** **Oct 03**



Our Plan for the Day



Today's Agenda

- 0800 - 0930 Group discussion**
- 0930 - 1000 Group windshield tour of AEDC**
- 1000 - 1215 Breakout sessions (four groups) -
 hosted by our Business Area Managers**
- 1215 - 1300 Lunch**
- 1300 - 1400 Out briefs from the breakout sessions**
- 1430 - 1530 Stakeholder breakout session -
 special topic**
- 1530 - 1600 Out brief from break out session**
- 1600 - 1700 Wrap up**
- 1800 Dinner at the Arnold Lakeside Club**

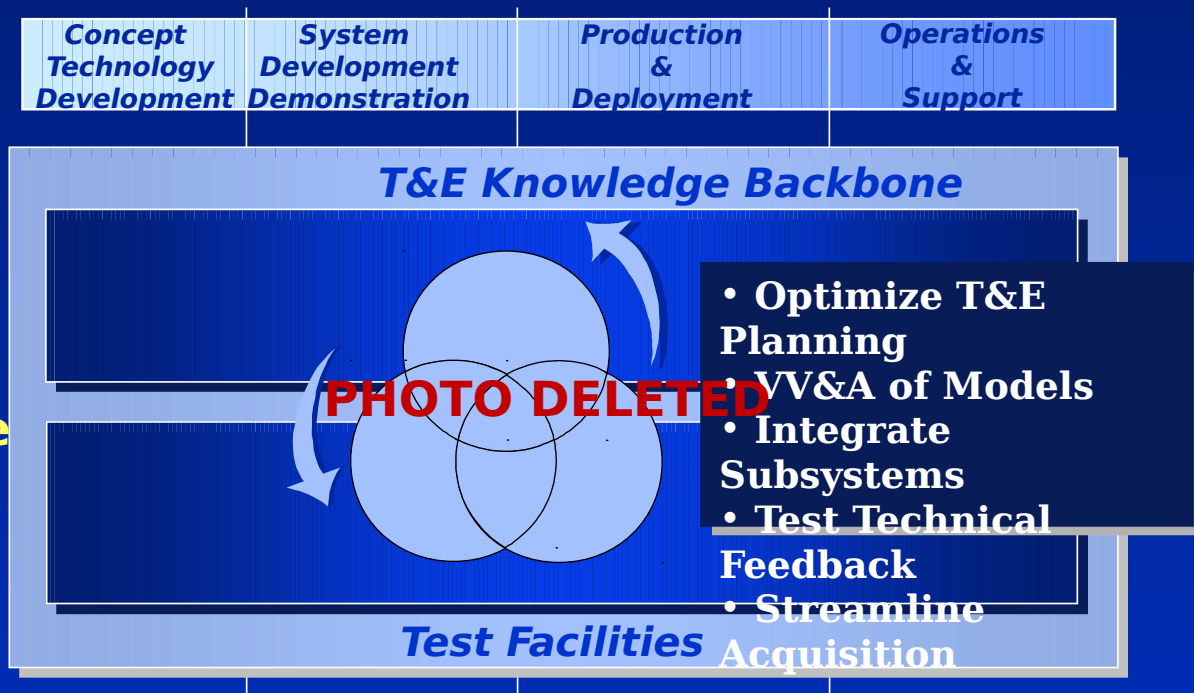


VISION



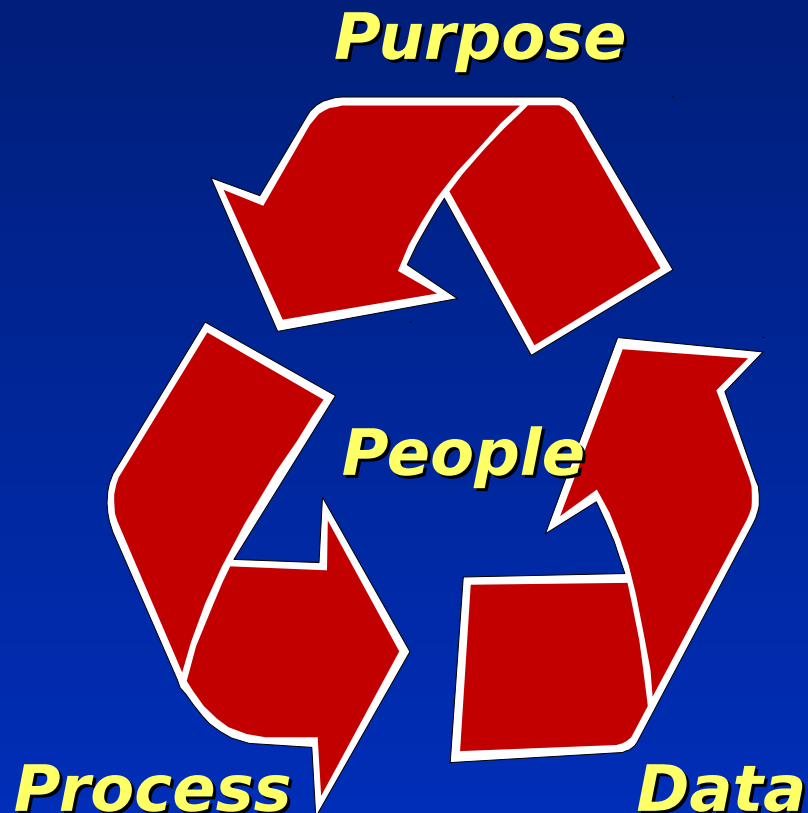
VISION – T&E Enterprise

- Integrating people, processes, and infrastructure across organizations and acquisition phases
- Utilizing a T&E Knowledge Backbone to manage knowledge for decision making and streamlining the acquisition process
- Increasing flexibility for spiral development





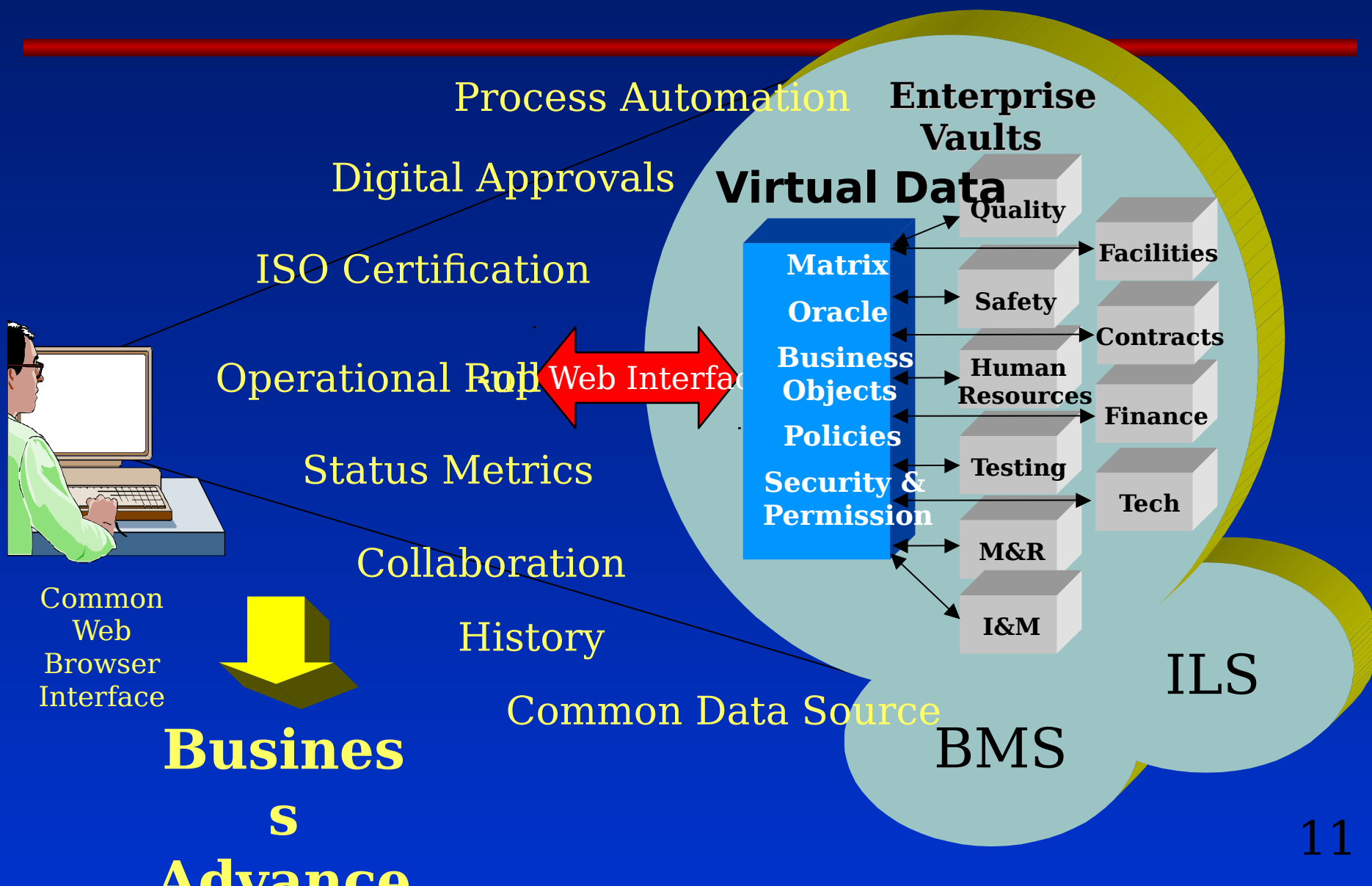
VISION – Interconnected



- **e-Business approach to enterprise management**
 - Virtual data and knowledge transfer
 - Virtual business process management
- **Collaboration with stakeholders and customers**
- **Focus on purposeful application of Information Technology**



VISION – e-Business at AEDC





Strategic Thrusts

Critical Success Factors

Satisfy Our Customer's Needs (ST1)	Improve Business Practices (ST2)	Sustain Technological Superiority (ST3)	Operate a Quality Installation (ST4)	Enable Our People to Excel (ST5)
Deliver Customer Expectations	Accurately Identify and Allocate Costs	Maintain Facility and Support System Health and Readiness	Maintain Environmental Compliance	Match Skills to Requirements
Improve Customer Relationships	Control and Improve Processes	Optimize Facility Capacity and Utilization	Maintain Safety Standards	Maintain a Motivated and Professional Work Force
Effectively Market and Sell		Plan, Program and Execute Integrated Investment Efforts	Provide Quality Base Support Services	
Leverage Public and				



BACKGROUND



Mission of AEDC



Provide the nation with capability,
warfighters with tools, other test centers
& system program offices with data and
knowledge



Dual Mission



To provide our customers with the world's most effective and affordable aerospace ground test products and services

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To ensure ground test facilities, technologies, and knowledge fully support today's and tomorrow's



Arnold Engineering Development Center



CUSTOMERS

**DoD, Industry,
National,
International**

2,584 People

**63 / 27 / 14
Test Cells**

**\$290M FY02
Budget**

**\$7 Billion
Investment**

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**High Performance
Organization**

**White Oak
Site**

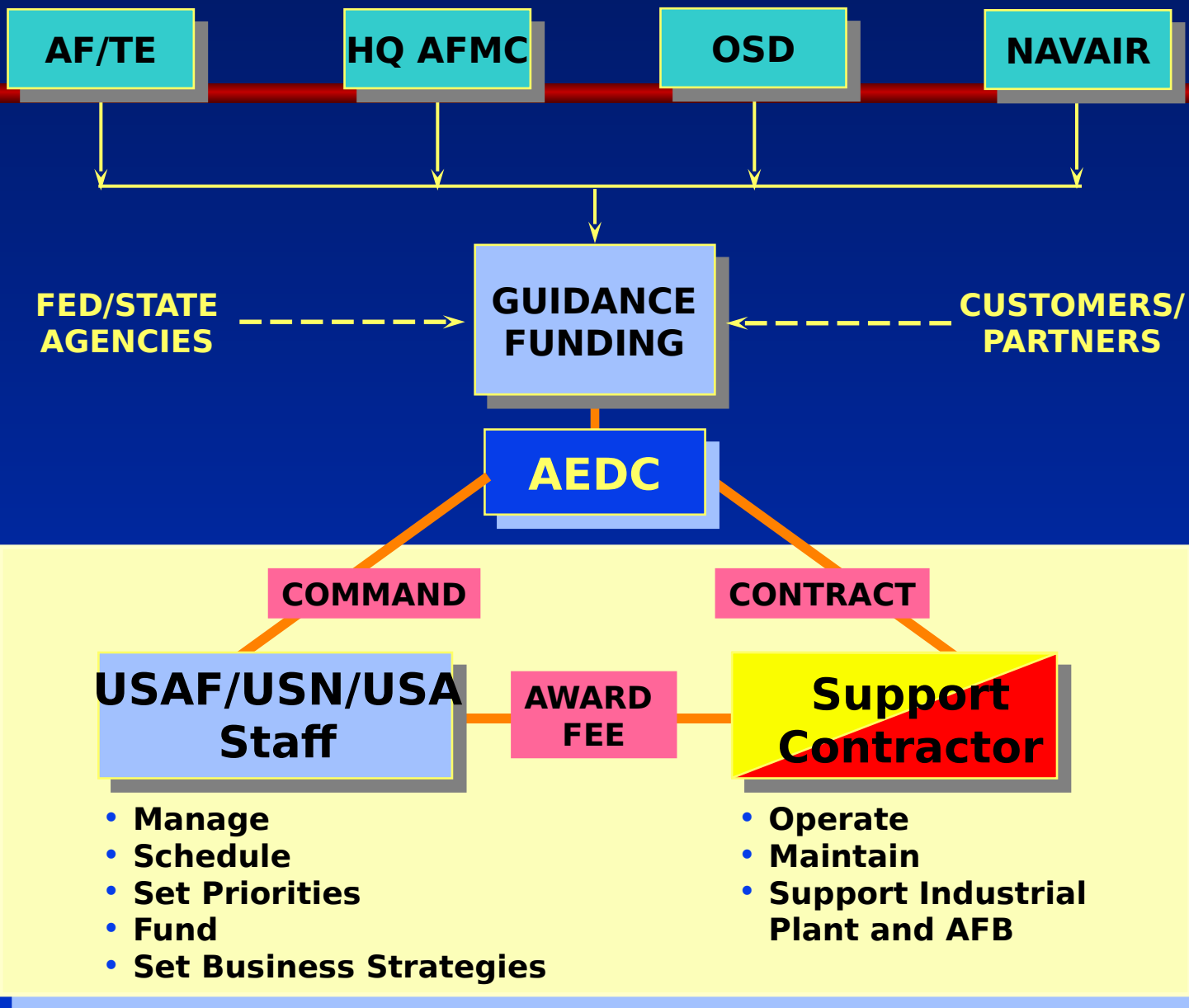


Business Model and History

- **Center Concept of Operation**
 - **Government management and direction (10% of people)**
 - **Contractor testing and support (90% of people)**
- **Contract History**
 - **1949 - Unitary Wind Tunnel Plan Act established AEDC**
 - **1950 - 1977 - Sole source to ARO, Inc. (CPFF,CPIF,CPAF)**
 - **1980, 1985, 1990 - Competitive Selection of 3 contractors (CPAF)**
 - **1995 - Competitive selection of 2 contractors (CPAF)**
 - **Test Support - Sverdrup Technology**
 - **Center Support - ACS (Joint Venture: CSC, DynCorp, Gen Physics)**



Management Structure





AEDC Model Roles & Responsibilities



(Current Contract Structure)

Government

- Strategic & programmatic direction
- What and when AEDC tests
- Interface with customers
- Workload
- Budgeting, prioritization & allocation of funds
- Contractor evaluation

Test Support

- Test engineering
 - Wind Tunnels
 - Turbines
 - Rockets
 - Arc Heaters
 - Ranges
 - Chambers
- Test Technology
- Facility O&M
- Instrumentation
- Plant O&M

Center Support

- Central computer
- Base support & maintenance
- Photo Lab
- Chem Lab
- PMEL
- Environmental
- Utilities
- Logistics
- Transportation
- Base security





Current Work Breakdown Structure





Evolving the Work Breakdown Structure





Current Contract Structure

- **Competitive - Two contract efforts (Test & Support)**
 - Five-year contracts; with single 3-year option
 - Total contracts price (8-yr) - \$1.8B
 - Adjusted annually to match work load
- **Performance-based Cost-Plus-Award Fee contracts**
 - Six month award fee periods
- **Contract Resources**
 - Labor - 78%
 - Materials, services, taxes & other - 18%
 - Award fee - 4 to 5% (zero base fee)



Organizational Conflict of Interest



- Our requirement – assure objective analysis/work by our support contractors
 - Usually precludes support contractor(s) from design/development/production of any products tested at AEDC
 - Applies to teammates and affiliates
 - Common ownership the key issue
- Opening up provision with appropriate mitigation plans may allow greater competition for our contracts...*more opportunity for improvement and cost reduction initiatives*
 - We're evaluating experiences at other T&E locations
 - Your views are important

Ensuring continued trust in AEDC is paramount



COST ACCOUNTING AND REIMBURSEMENTS



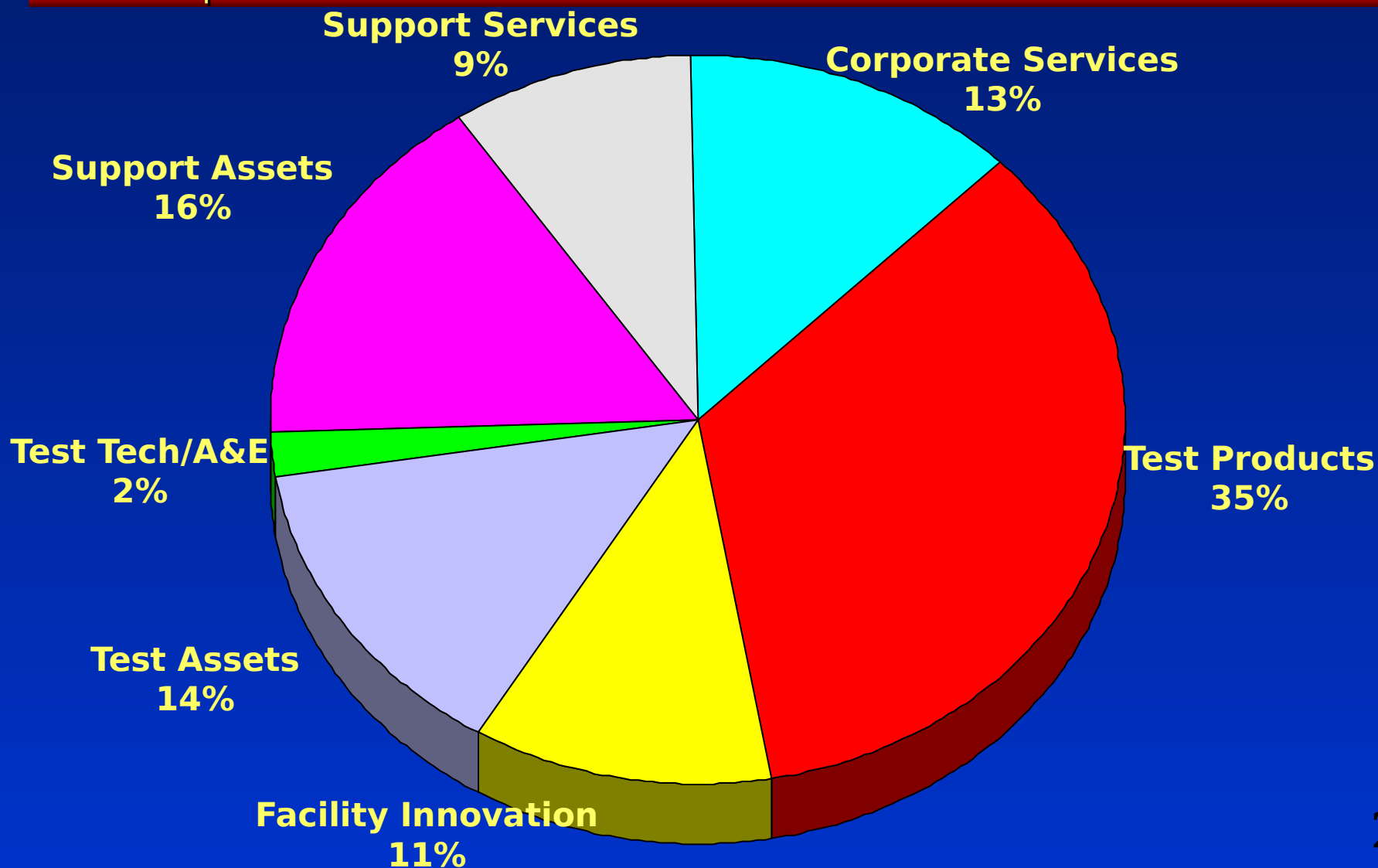
Purpose/Overview

- **Purpose**
 - **Provide a broad-based understanding of the financial regulatory framework that governs AEDC cost accounting practices and test customer cost reimbursements (a.k.a., billing)**
- **Overview**
 - **Numbers that define AEDC**
 - **AEDC's Business Environment**
 - **Identifying Costs**
 - **Reimbursement Policy**
 - **The Capacity Model**
 - **Product Service Rates**



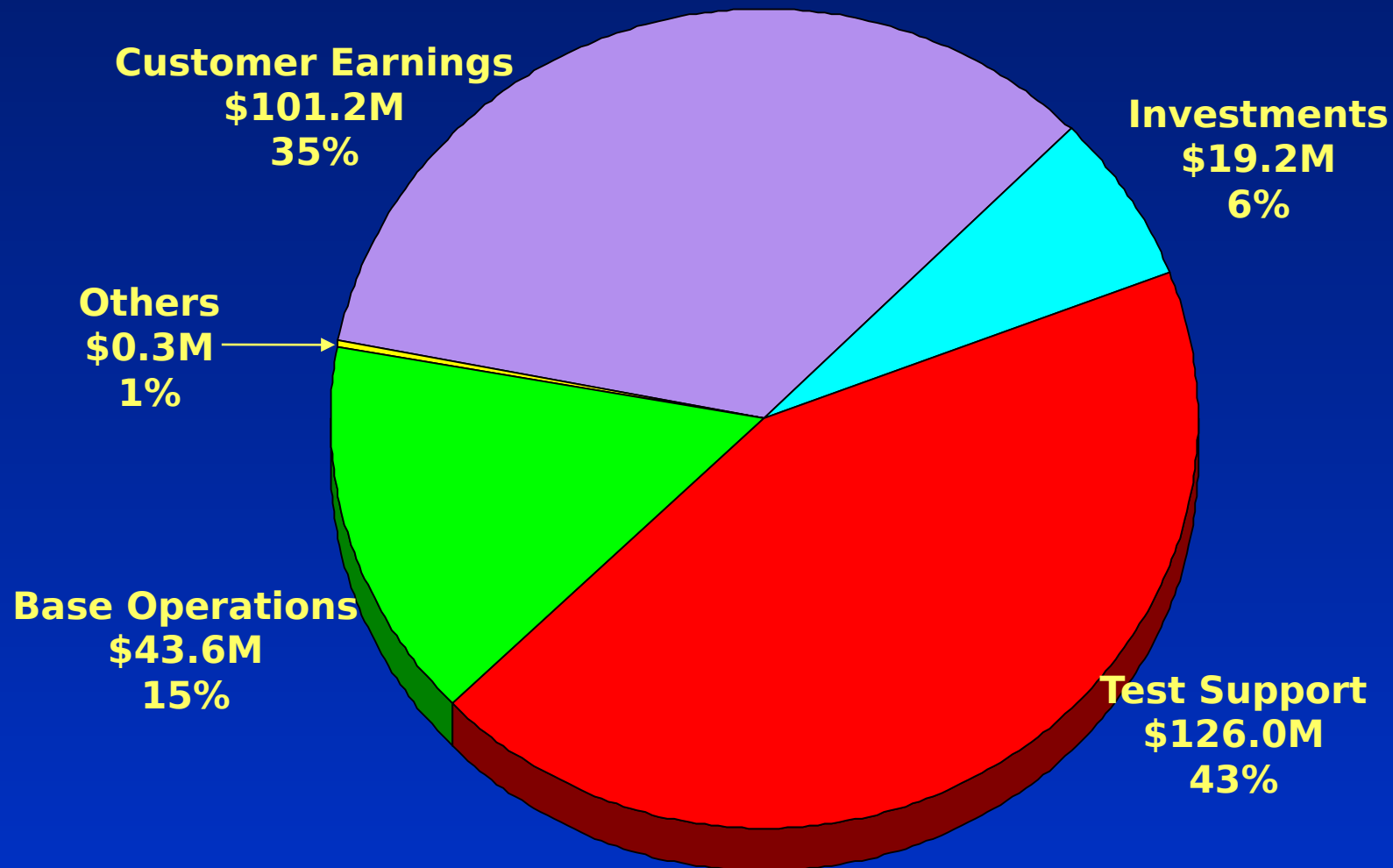
Numbers That Define AEDC

Cost of Operations: FY02 TOA = \$290.3M





Numbers That Define AEDC Funding Sources: FY02 TOA = \$290.3M





Numbers That Define AEDC FY02 Customer Earnings =

\$101.2M

NASA (X-37 X-38)

MDA (GMD,
TMD)

DTRA

Other

MDA

THAAD, GBI

9%

Boeing, GE,
Lockheed, Loral,
Pratt & Whitney,
Rolls, Williams

Commercial

21%

Air Force

31%

F-22, F-15, F-16,
Minuteman, ICBM
Motors, Reentry
Vehicles, Engine
CIP

Joint
Programs

17%

5%

Joint Strike
Fighter

2%

ARMY
IR TSMADS

NAVY

F-18 E/F, F405,



AEDC Business Environment



- **Customer Requirement: Value**
 - **Quality Test Data**
 - **Schedule and Performance Flexibility**
 - **Rate Stability/Predictability**
- **DoD MRTFB**
 - **Full Cost Accounting For All Customers**
 - **Cost Reimbursement (Billing) - Varies by Customer Type**
 - **No Profit/Loss (Break Even)**



AEDC Business Environment Private & Government CAS Virtually Identical



Private Sector

IRS, SEC Acts

Titles 12, 15, 20

FASB, IASC
(GAAP, FAS)

Entity Specific
(Reporting Standards,
Public Filings, etc.)

Trust

Public Law



U.S. Codes &
Regulations



Financial Standard
Boards



Operating Guidelines

Gov't Sector

CFOA, FMFIA,
FFMIA, etc.

Titles 10, 31, 39

GASB, FASAB
(SFFAC, SFFAS)

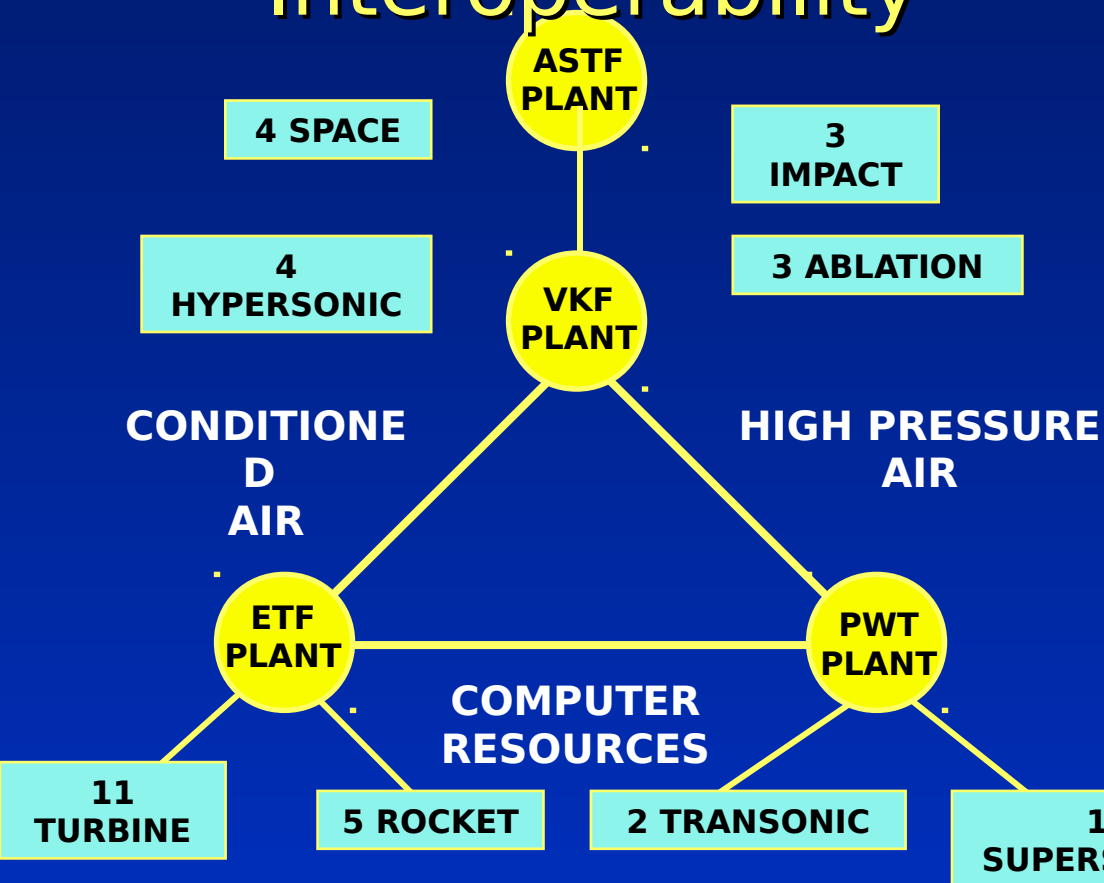
Agency Specific
(FMRs, Directives,
Instructions)

Consistently



AEDC Business Environment

Cost Driver: Plant Interoperability



Test Cells: Produce Data

Plants: Create Test Environment

Plant Interconnection

- Reduces Capital & Operating Costs
- Maximizes Environmental Simulation Range
- Enhances Reliability
- Constrains Schedule Responsiveness
- Constrains Divestiture Options

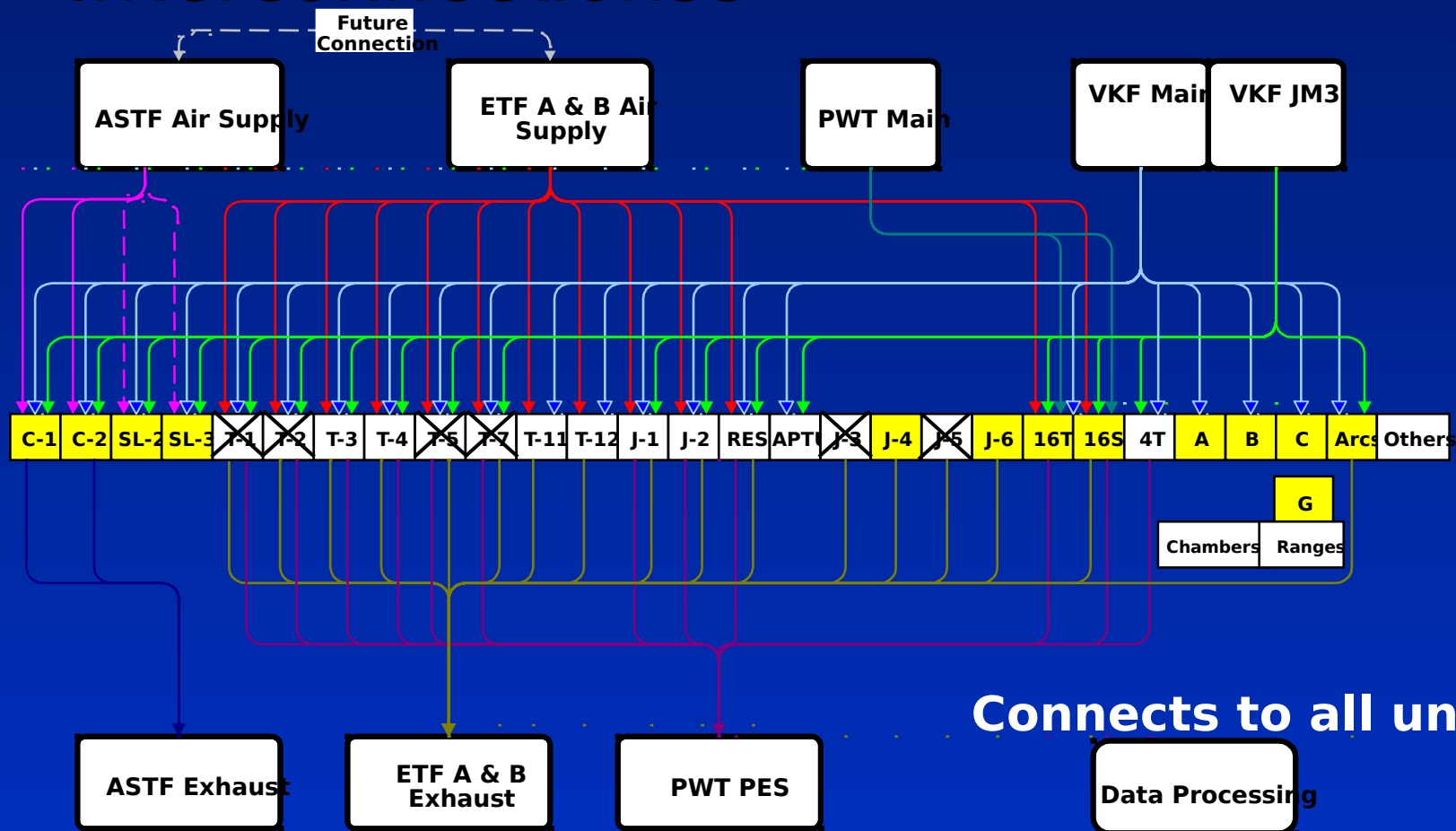
ETF - Engine Test Facility
VKF - Von Karman Facility
PWT - Propulsion Wind Tunnel
ASTF - Aeropropulsion System Test Facility

**PLANTS ARE
MAJOR COST DRIVERS**



AEDC Business Environment

Cost Driver: Plant Interconnections³



Connects to all units

 = AEDC Unique Facility



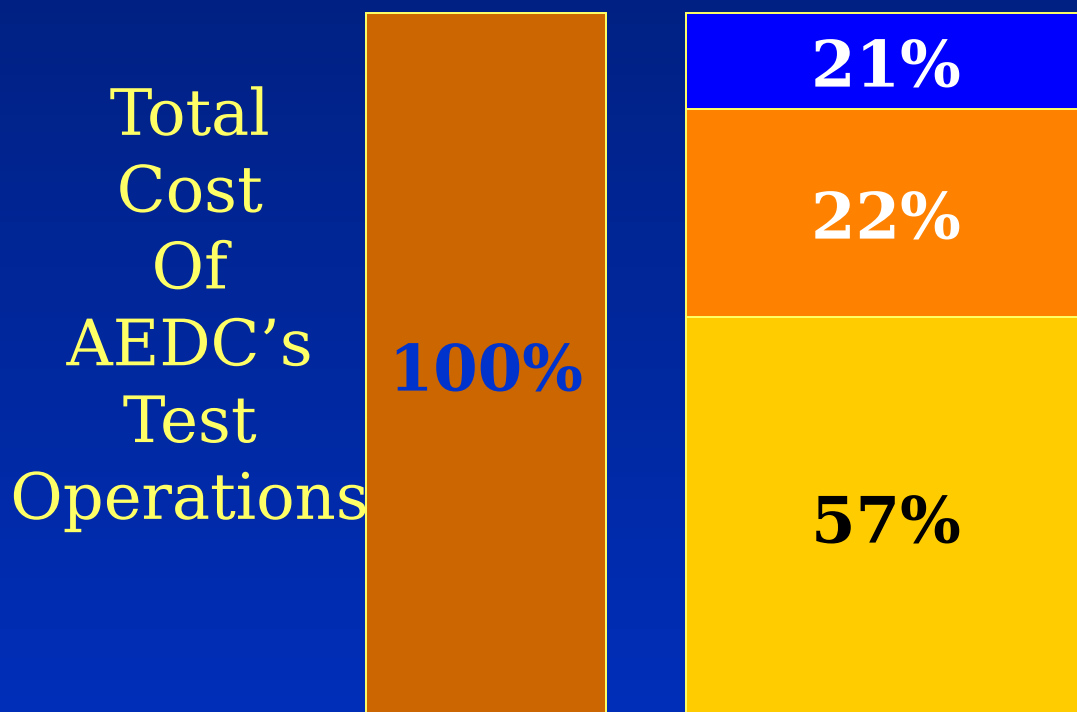
Identifying Costs



- **Full Cost Reporting**
 - **All Direct, Indirect, and Overhead Costs**
- **All Customers Pay All Direct Costs**
- **No Customer Pays Full Costs**



Identifying Costs Cost Categories



Overhead *
(Center Overhead)

Indirect *
(Test Indirect & Test
O/H)

Direct
(Customer Funded)

* MRTFB and/or
Customer Funded



Identifying Costs AEDC Accounting Entity

Total Cost

Overhead

Indirect

Direct

Corp
O/H

Test
O/H

Test
Indirect

Direct

Air Force Base Staff Functionals

Test Supt

Base Support

Test Staff Functionals

Test Supt

DOF	DOP	DOS	DOO
Test Spt Indirect			
Direct Job #1	Direct Job #2	Direct Job #3	Direct Job #4
Direct Job #5			

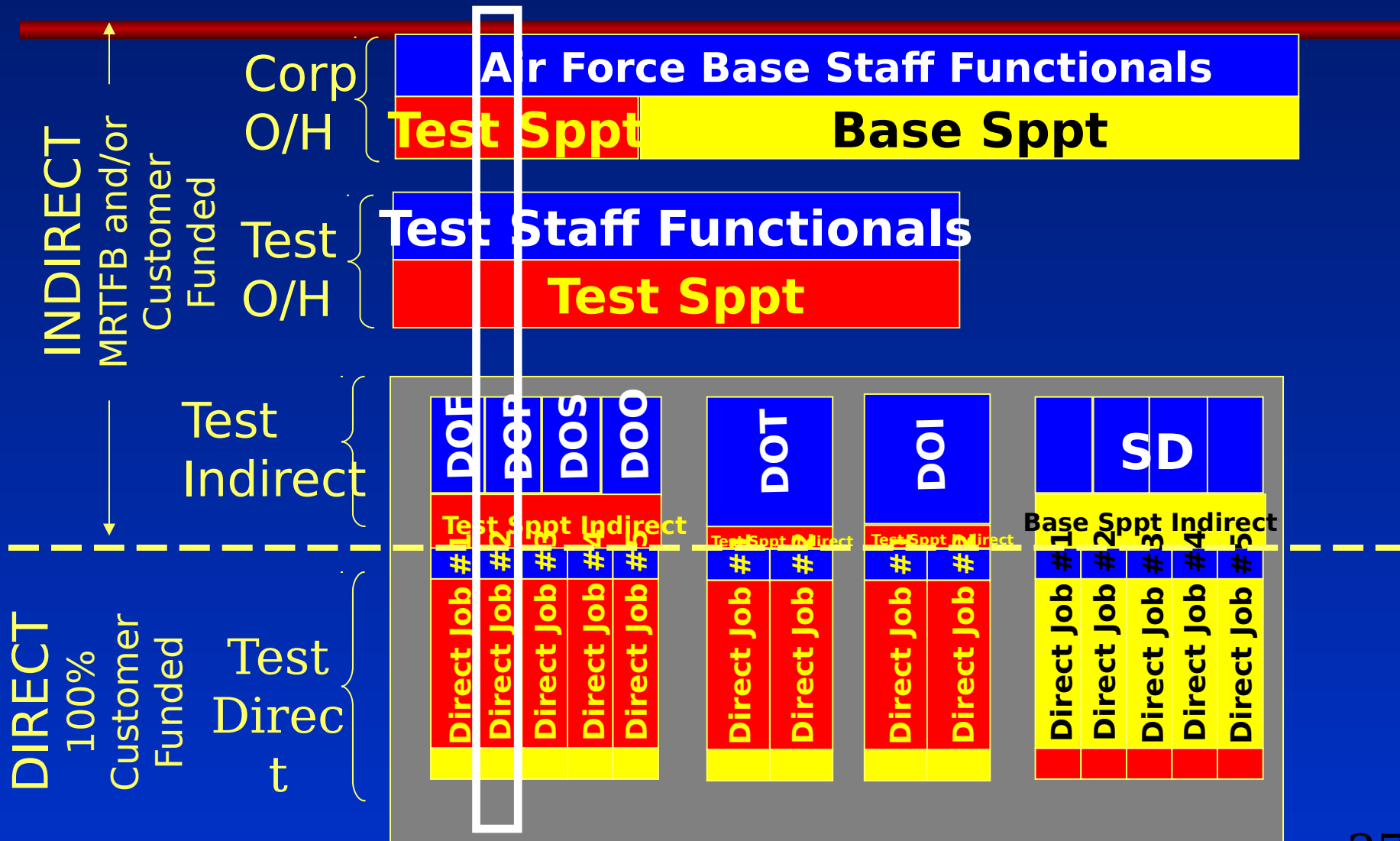
DOT
Tech Spt Indirect
Direct Job #1
Direct Job #2

DOI
Inv Spt Indirect
Direct Job #1
Direct Job #2

SD
Base Spt Indirect
Direct Job #1
Direct Job #2
Direct Job #3
Direct Job #4
Direct Job #5



Identifying Costs Project "Full Cost"





Reimbursement Policy



- **AEDC Complies with SFFAS #4 “Cost Accounting” Standard**
- **Customers “Pay” All Test Direct Plus Appropriate Indirect/Overhead Cost as Determined by Customer Category and DoD Reimbursement Rules**



Reimbursement Policy

SFFAS #4

OMB Circular A-25

DoDD 3200.11DoD
FMR 7000.14-R, Vol. 4
FMR 7000.14-R, Vol. 11A

**AEDC
REIMBURSEMENT
POLICY**

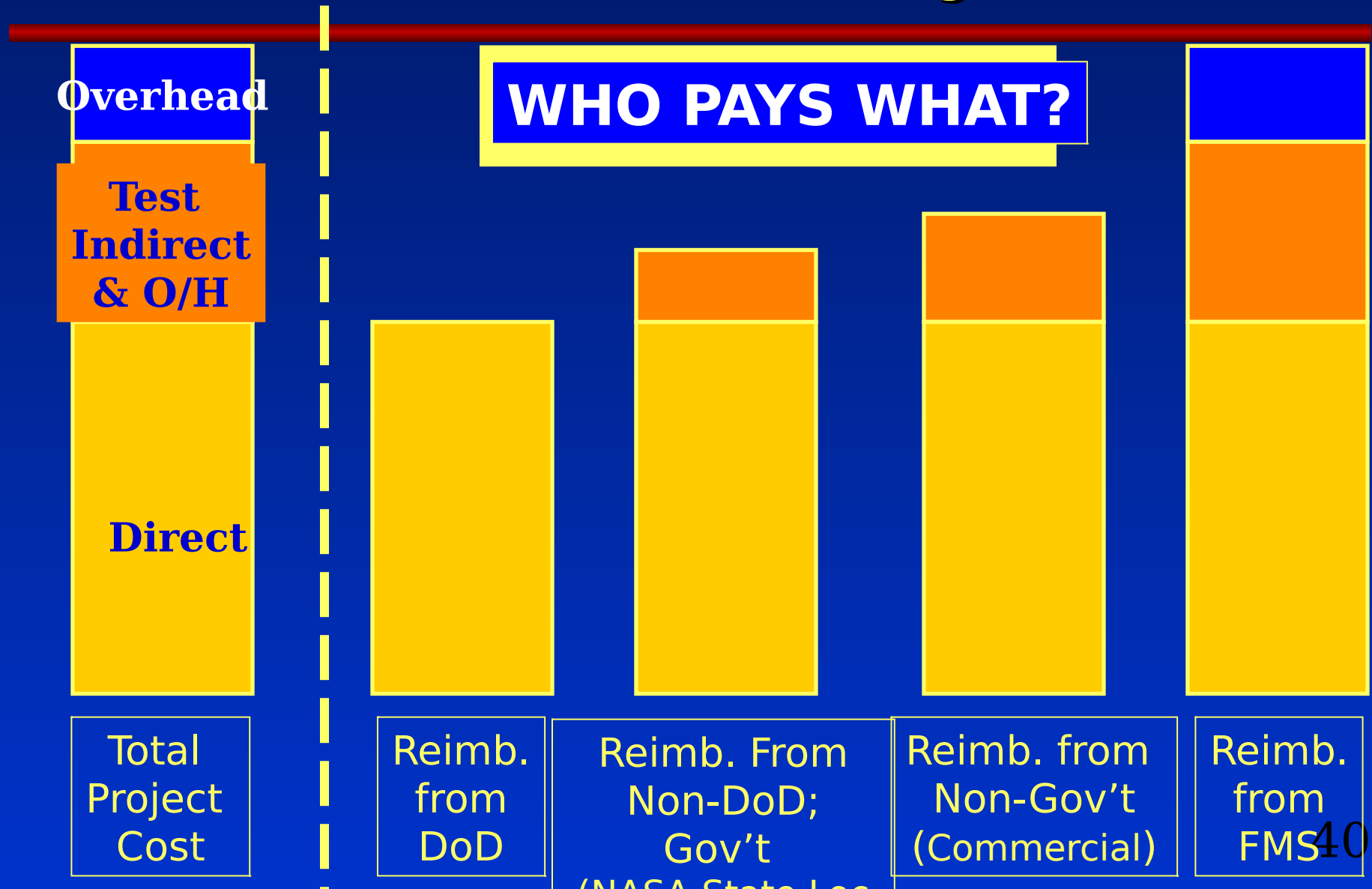
AFI 65-601
AFMCI 65-602
AFMCI 65-603
FM Handbook

10 U.S.C. §2681
Gansler Letter, 13 Mar 98
Oliver Letter, 8 Sep 98

Zook Letter, 18 Mar 98
Eckhardt Letter, 1 Apr 98



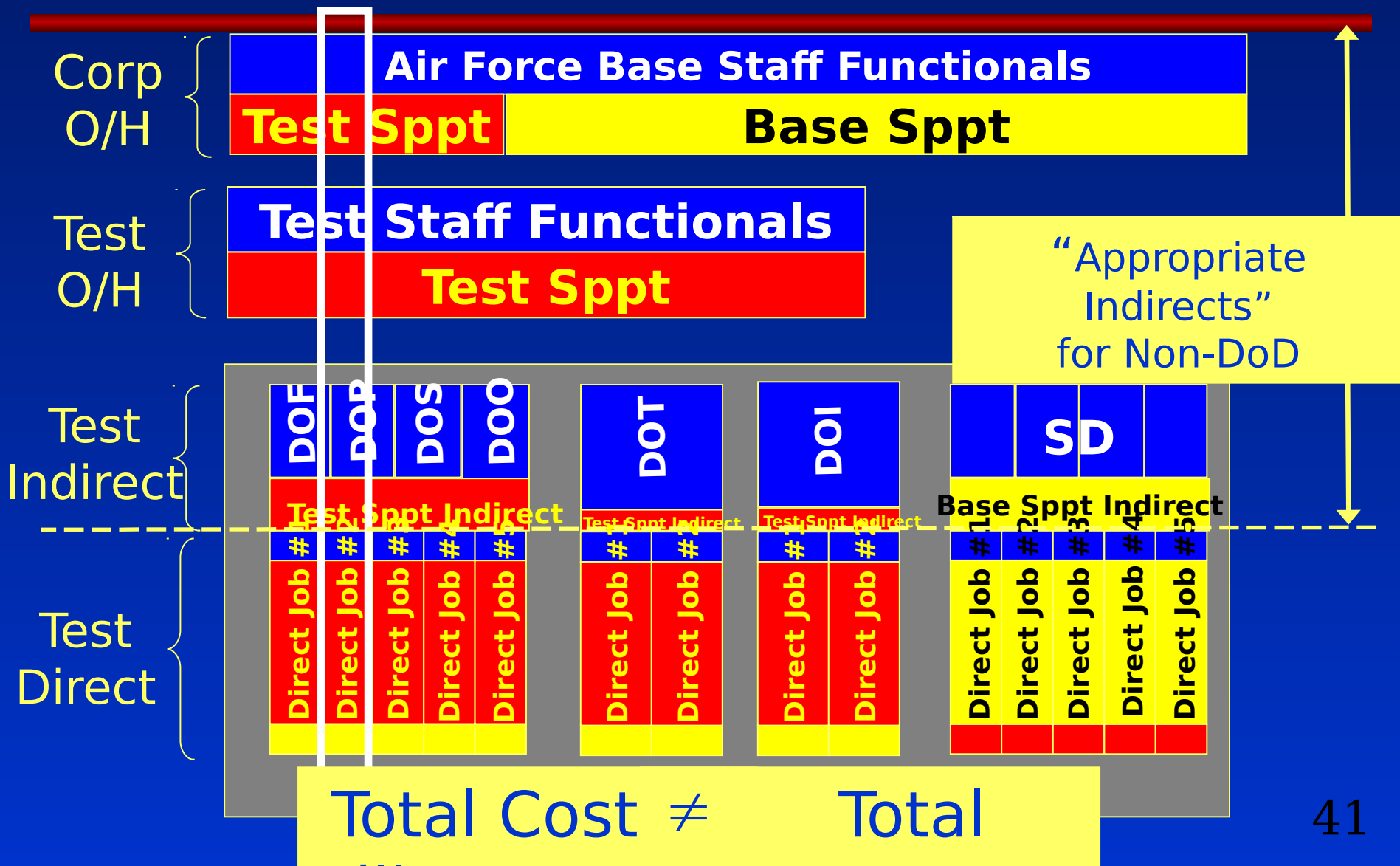
Reimbursement Policy Total vs. Customer Billing





Reimbursement Policy

Full Cost Revisited





The Capacity Model

Capacity Concepts



- **Workload**
 - All Projected Current Year Test
 - DoD + Non-DoD Gov + Commercial + FMS
- **Capacity**
 - Current DoD Workload + Projected Future DoD Requirements (DoD Sizing Issue)
 - Excludes Non-DoD Gov + Commercial + FMS
- **Unused Capacity**
 - $\text{Capacity} - \text{Workload}$



The Capacity Model



Planning

[Project
ed Worklo
ad]

WORKLOAD

**UNUSED
CAPACITY**

**RATES =
CAPACITY**

**÷
COSTS**

Execution

[As Add'l
Workload
Materializes]

WORKLOAD

UNUSED

**RATES
DO NOT
CHANGE**

- Add'l Workload
Buys
Down Unused



Product Service Rates

- **Rates Used to Recover Cost (UOH, AOH)**
- **Rates = Cost ÷ Capacity**
 - **Projected Annually**
 - **Validated Quarterly**
 - **Adjusted A/R to Recover \pm 5% at End of Year**
- **Capacity = Workload + Unused Capacity**
 - **Workload Funded by Customers**
 - **Unused Capacity Funded by MRTFB**
 - **Rate Stability within Relevant Range**



RESPONSE TO CUSTOMER NEEDS AND IMPROVEMENT INITIATIVES



Investment Decision Process

Requirements



SE/Asset Owner

- Validates
- Determines change to asset's health



Business Areas

- Assess impact to mission
- Prioritizes requirements

	Probability					
	A	B	C	D	E	F
Category	Frequent	Reasonably Probable	Occasional	Remote	Extremely Improbable	Impossible
I	①	①	①	②	③	③
II	①	①	②	③	③	③
III	②	②	③	③	③	③
IV	③	③	③	③	③	③



Requirements					
Need Date					



Functionals (Champions)

- Validates and prioritizes requirements
- Based on mission impact
- Operational risk management



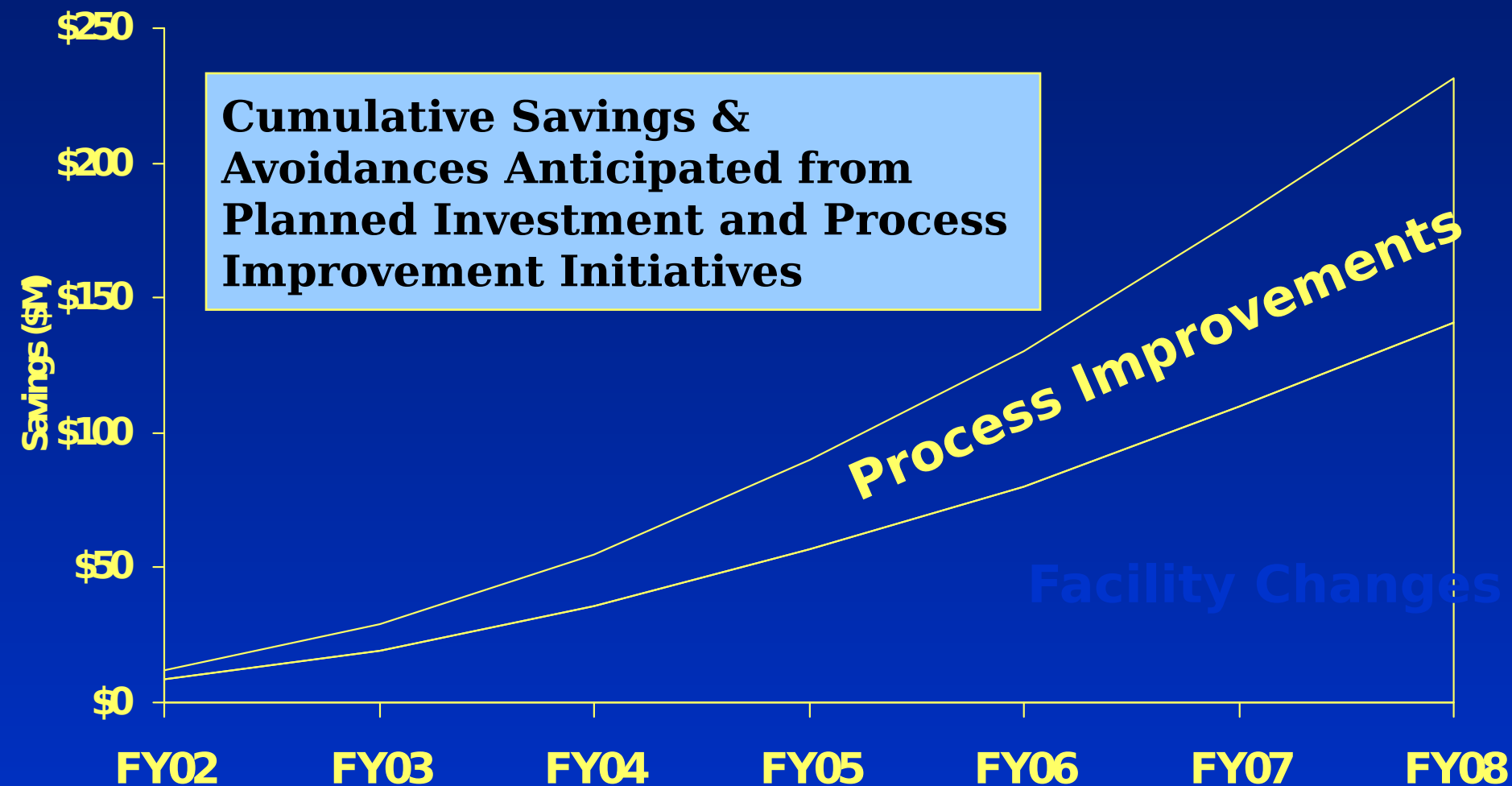
Corporate Board

- Decision making





Improvement Initiatives





Examples of Investments Being Made



Test Operations Modernization & Integration Project (TOMIP)

- ETF plant and control support automation systems
- Reduction in control rooms, personnel, and lost test time

- Completion in 2003

Propulsion Wind Tunnels Upgrade (PWT)

- Replace wind tunnel drive motors
- Modernize data acquisition system
- Improve flow quality
- Completion in 2004

Advanced Instrumentation & Control Systems (AIDACS)

- Fly-the-Mission testing of new generation weapon systems
- Test data to customer in near real-time (*Virtual Presence*)
- Completion in 2007

Propulsion Consolidation & Streamlining (PC&S)

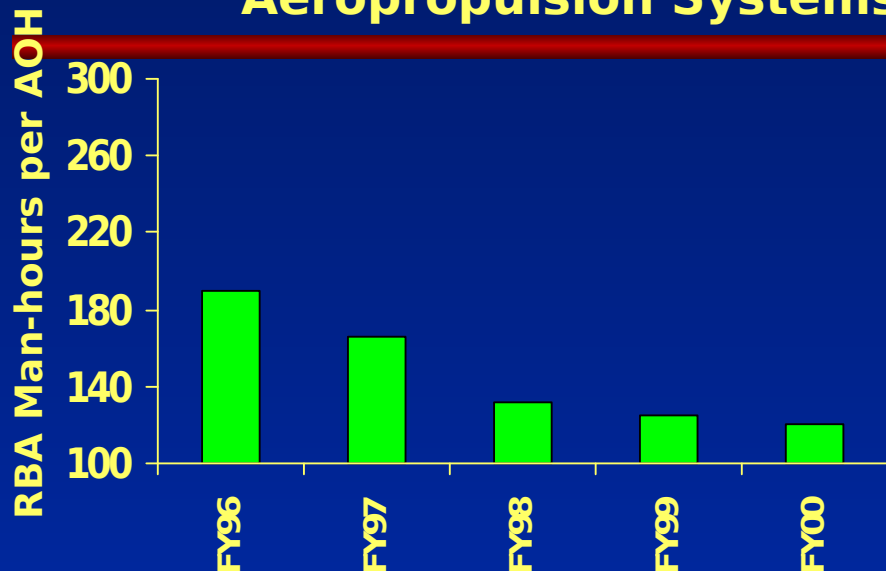
- Close ETF A & B plants
- Improve ASTF C- plant ops tempo
- Completion in 2009



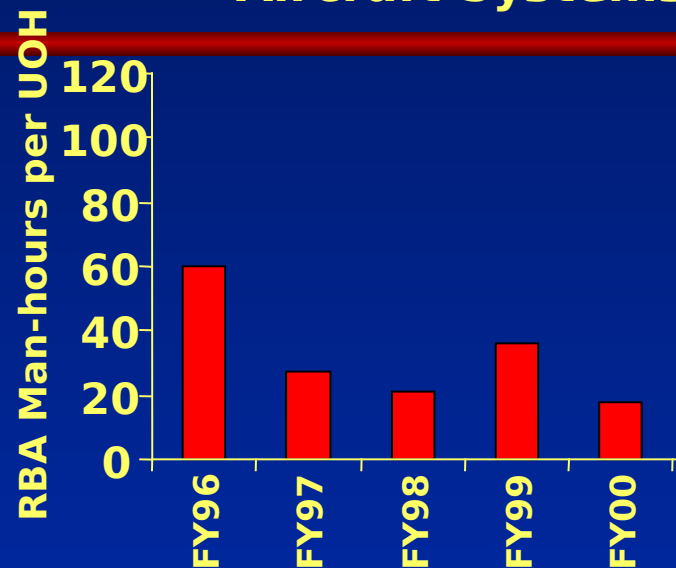
Operational Improvements



Aeropropulsion Systems



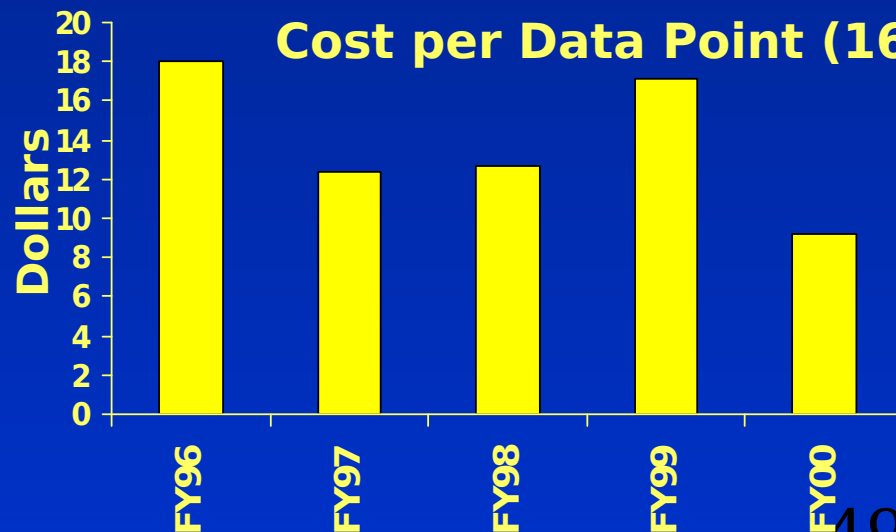
Aircraft Systems



- History of investments to improve data per operational hour

- Investments made to reduce direct personnel needed to run tests

Cost per Data Point (16T)

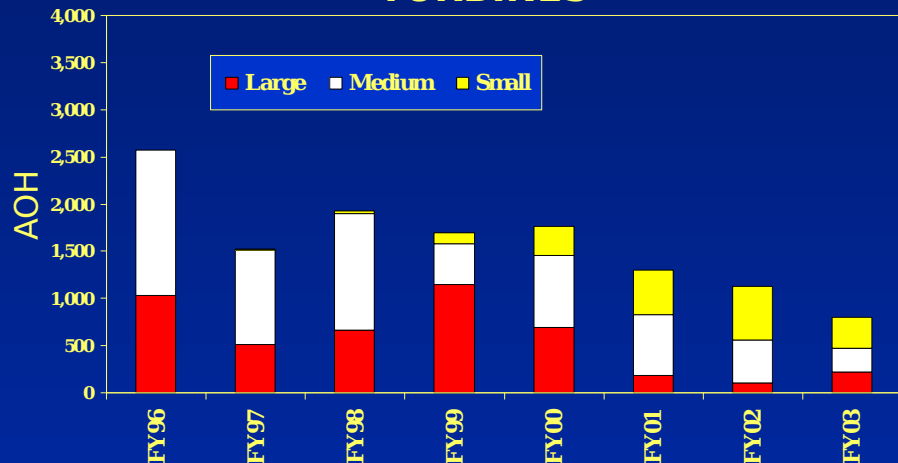




AEDC Test Workload

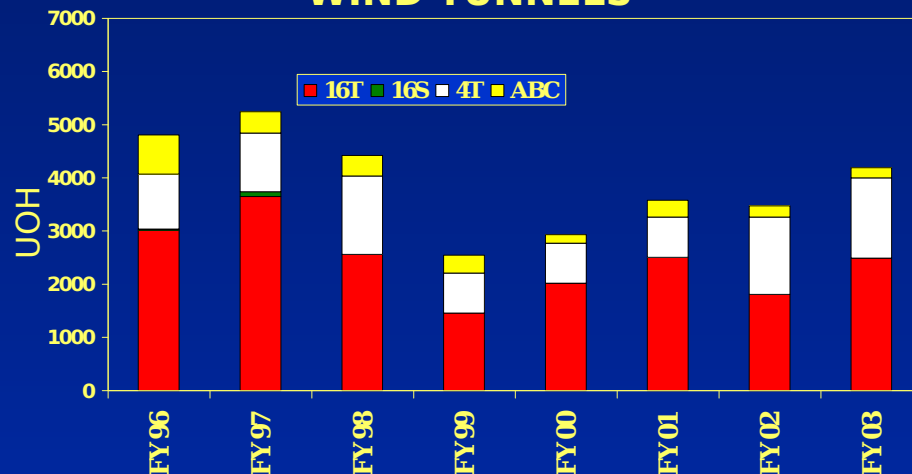


AEROPROPULSION SYSTEMS TURBINES

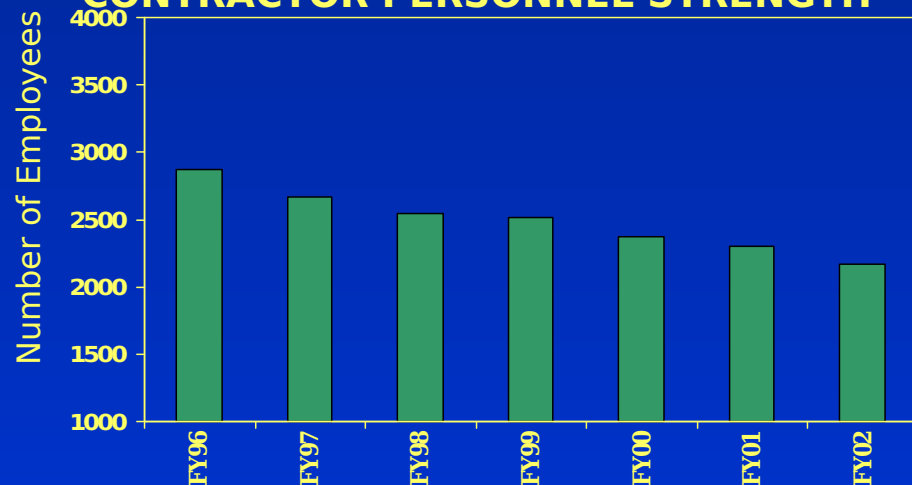


AIRCRAFT SYSTEMS

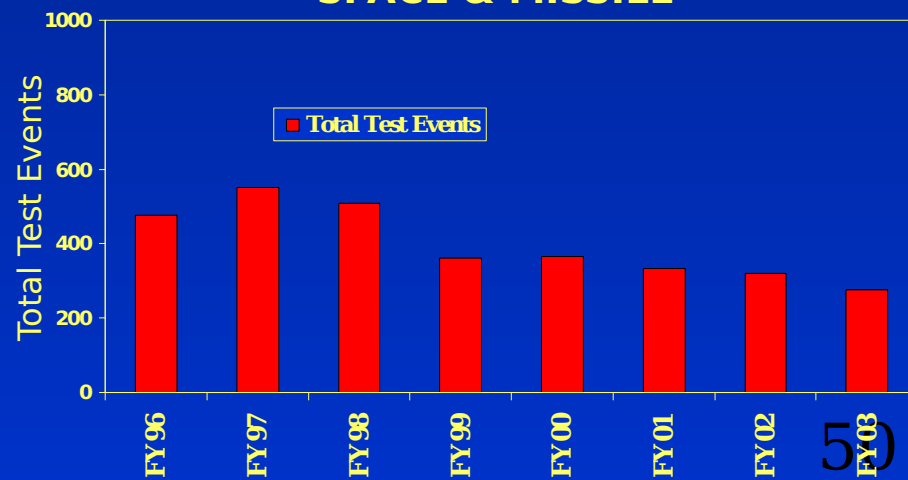
WIND TUNNELS



CONTRACTOR PERSONNEL STRENGTH



SPACE & MISSILE

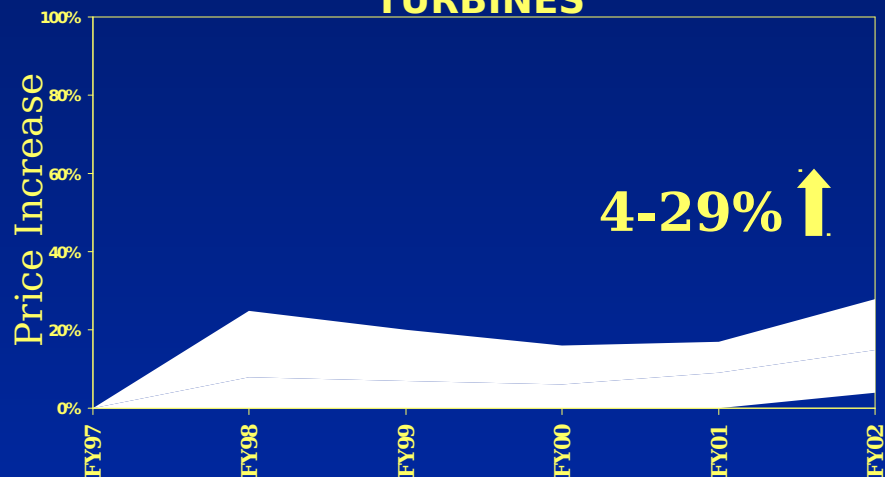




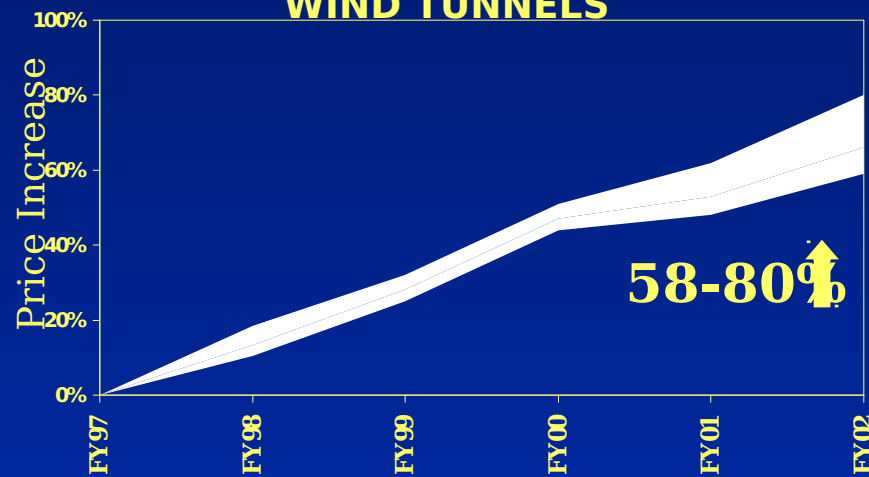
AEDC Customer Price History (FY 97-02)



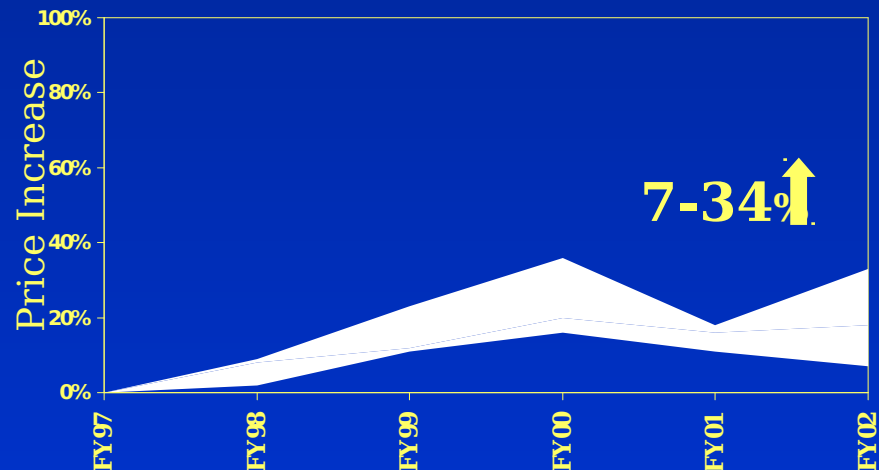
TURBINES



WIND TUNNELS



SPACE & MISSILE



- Price increases for standard tests (varies by test cell)
 - Inflation accounts for 16% increase
 - Balance of increases from costed entity re-allocation
- Improvement initiatives should result in stable or reduced prices



DISCUSSION



Off to the AEDC Mission Area

“See you at 1215 for Lunch”